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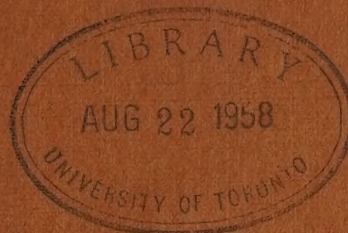
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HYDRO-ELECTRIC INQUIRY COMMISSION

ENGINEERING DATA

THE QUEENSTON-CHIPPAWA POWER DEVELOPMENT

CHRONOLOGICAL CHARTS

WALTER J. FRANCIS, C. E.

CONSULTING ENGINEER















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## CHRONOLOGICAL CHARTS







THE QUEENSTON-CHIPPAWA POWER DEVELOPMENT

CHRONOLOGICAL CHARTS.

Walter J. Francis.

For convenience of reference, a series of charts has been prepared to show in chronological order the dates of the more important events as they occurred from the beginning of the year 1914 until August 12th, 1922, in connection with the Queenston-Chippawa Power Development. There are nine charts in all, one for each year.

Each chart is divided into three principal columns entitled "Intake and Welland River", "Canal and Forebay", and "Screen House and Power House", in order from left to right of the page. The columns are subdivided into panels by months, commencing with January at the top, and ending with December at the bottom. Further, an attempt has been made to place the notes in chronological order in each month, that is by putting the earlier ones in the top of the panel and the later ones at the bottom.

In the case of general notes, that is notes which apply to more than one column, the wording has been run continuously across the two or the three columns, as the case may be. For example, a note regarding the general strike is made to



THE BRITISH-CHINESE TRADE INVESTIGATION

CHRONOLOGICAL CHART

Editor J. Hobbs.

For convenience of reference, a series of charts has been prepared to show in chronological order the dates of the more important events as they occurred from the beginning of the year 1840 until August 1892, in connection with the Sino-British Trade Investigation. These are nine charts in all, one for each year.

Each chart is divided into three principal columns entitled "Imports and Exports", "Treaties and Conventions", and "General Events", in order from left to right of the page. The columns are subdivided into periods by months, commencing with January at the top, and ending with December at the bottom. Further, an attempt has been made to place the notes in chronological order in each month, that is by putting the earlier ones in the top of the period and the later ones at the bottom.

In the case of general notes, that is notes which apply to more than one column, the wording has been run continuously across the two or three columns as the case may be. For example, a note regarding the general state in regard to



cross all three columns, and a note regarding the filling of the canal and the starting of a main unit is made to cross the two last columns.

In compiling the dates an effort has been made to incorporate the more important ones, and at the same time to omit numberless details which would tend to make the charts cumbersome.

The events enumerated in the charts have been collected from the records of the Hydro-Electric Power Commission in connection with the Queenston-Chippawa Power Development, and have been verified as far as it is practicable to do so. The records referred to are as follows:-

(1) the field diaries, in which the principal events in connection with the construction work were recorded from day to day, by a responsible member of the engineering staff, on the Queenston-Chippawa Power Development,

(2) progress records, consisting of drawings, tables and diagrams prepared by the Department of the Chief Field Engineer, in which are given details of the actual construction progress,

(3) contract documents, from which the dates of placing the more important orders for construction and permanent equipment were obtained,

(4) Advisory reports by all the Consulting Engineers, and

(5) Internal reports.

In addition, some of the dates have been given to us by correspondence, while others have been obtained verbally during conferences with the engineers of the Hydro-Electric Power Commission.

Should subsequent studies prove the desirability of the inclusion of still

and from 1940 to 1942 the quality of the water was poor, according to the

including a note with an arrow to point to the last sentence.

Any use or processing of these data for other than the stated purpose is prohibited.

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(5)

other dates in the charts, it is believed that the charts are in such form that the information may be readily added and a corresponding second edition duly issued.

*Walter J. Francis*

Toronto, August 12th, 1922.

Consulting Engineer.

COPY

1914

DISCHARGE OF DUTY

And that out of the above-mentioned amount of \$10,000,000, the sum of \$5,000,000 is to be paid to the Government of the United States, and the sum of \$5,000,000 is to be paid to the Government of the State of New York.

*Handwritten signature*

Witness my hand and seal this 10th day of January, 1903.

COPY



	INTAKE AND WELLAND RIVER	CANAL AND FOREBAY	SCREEN HOUSE AND POWER HOUSE
JANUARY			
FEBRUARY			
MARCH			
APRIL			
MAY	Reconnaisance Level Transit	Survey commenced on Party commenced on Party commenced on	May 4th. May 14th. May 28th.
JUNE	Comparative Survey of	"Jordan - Erie" Project commenced on	June 15th.
JULY			
AUGUST			
SEPTEMBER			
OCTOBER	Comparative Survey of	"Jordan - Erie" Project completed on Core drill commenced at Montrose on October 26th.	October 7th.
NOVEMBER			
DECEMBER			

# 1914

NOTE - THIS CHART REFERS ONLY TO  
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HYDRO-ELECTRIC INQUIRY COMMISSION  
W.D. GREGORY - CHAIRMAN  
QUEENSTON-CHIPPAWA POWER DEVELOPMENT  
**CHRONOLOGICAL CHART**  
(IN 9 SHEETS OF WHICH THIS IS SHEET I)

Toronto, August 12<sup>th</sup> 1922. Made by ~~WJF~~ Checked by *WJF*  
WALTER J. FRANCIS, C.E.,  
CONSULTING ENGINEER





	INTAKE AND WELLAND RIVER	CANAL AND FOREBAY	SCREEN HOUSE AND POWER HOUSE
JANUARY	Temporary Field Topographical Map	Office at Niagara Falls for Proposed Canal Location	closed January 20th. commenced January 28th.
FEBRUARY			
MARCH	Topographical Map	for Proposed Canal Location	finished March 1st.
APRIL	Studies and Preliminary Design	of Queenston - Chippawa Power	Development commenced in the Spring.
MAY			
JUNE	Field Work resumed (Cross "Estimate	Sections and Topography, following No 1" finished	the Studies), June 21st. June 23rd.
JULY			
AUGUST			
SEPTEMBER		Core drilling discontinued on September 15th.	
OCTOBER			
NOVEMBER			
DECEMBER			

# 1915

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**CHRONOLOGICAL CHART**  
(IN 9 SHEETS OF WHICH THIS IS SHEET 2)  
Toronto, August 12<sup>th</sup> 1922. Made by ~~W.J.F.~~ Checked by *W.J.F.*  
WALTER J. FRANCIS, C.E.,  
CONSULTING ENGINEER





	INTAKE AND WELLAND RIVER	CANAL AND FOREBAY	SCREEN HOUSE AND POWER HOUSE
JANUARY			
FEBRUARY			
MARCH			
APRIL	First Act of *The Ontario -	the Ontario Legislature Niagara Development Act	assented to, April 27th. (6 George V., Chap. 20).
MAY			
JUNE			
JULY		Well Drilling commenced to supplement Core Drill records on July 28th.	
AUGUST	Purchase of Right	of Way commenced	on August 16th.
SEPTEMBER			
OCTOBER			
NOVEMBER		Survey for Construction Railway commenced on November 27th.	
DECEMBER			

# 1916

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**CHRONOLOGICAL CHART**  
(IN 9 SHEETS OF WHICH THIS IS SHEET 3)  
Toronto, August 12<sup>th</sup> 1922. Made by ~~W.D.G.~~ Checked by *W.J.F.*  
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	INTAKE AND WELLAND RIVER	CANAL AND FOREBAY	SCREEN HOUSE AND POWER HOUSE
JANUARY			
FEBRUARY		R.D. Johnson's Report (Hydraulic Characteristics of Rock Section) submitted on February 1st.	
MARCH		Large Plant Order, including six shovels Nos 1 to 6 placed on March 28th.	
APRIL	Second Act of "The Ontario -	the Ontario Legislature Niagara Development Act, 1917, R.D. Johnson's Report (Comparative Waterways for Development of 900,000 HP) submitted on April 18th.	assented to, April 12th. (7 George V., Chap. 21).
MAY		Earth Excavation began at Bowman's Gully on May 10th (Shovel No 7). Work-train Service commenced on May 17th.	
JUNE		Construction of Railway yards commenced on June 1st. (Shovel No 5). Study for Determination of Economic Velocity in Concrete-lined Canal commenced in June.	
JULY		Study of Economic Rock Section commenced in July.	
AUGUST			
SEPTEMBER		Small Steam Shovel No 7, ordered on September 13th. A.C. Douglass's Report on probable Cost of Rock and Earth Excavation (with other papers) submitted on September 19th. and 24th.	Clearing of Power House Site commenced on September 29th.
OCTOBER			
NOVEMBER			
DECEMBER		Canal Cut commenced by first Electric Shovel on December 15th. (Shovel No 3).	
* Estimate No 2* for (300,000 HP) submitted on			December 26th.

# 1917

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(IN 9 SHEETS OF WHICH THIS IS SHEET 4)

Toronto, August 12<sup>th</sup> 1922. Made by ~~W.D.~~ Checked by *W.D.*  
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	INTAKE AND WELLAND RIVER	CANAL AND FOREBAY	SCREEN HOUSE AND POWER HOUSE
JANUARY		Shovel N <sup>o</sup> 4 commenced in Canal Cut on January 12th.	
FEBRUARY		Operation of Whirlpool Substation commenced in February.	
MARCH		Rock drilling commenced in Forebay on March 2nd. Rock drilling commenced in Canal on March 9th. Shovel N <sup>o</sup> 1. (first large electric shovel) commenced in Canal Cut on March 16th.	
APRIL		Shovel N <sup>o</sup> 2. (second large electric shovel) commenced in Canal Cut on April 13th.	
MAY	Lidgerwood Cableway commenced on May 13th.	Shovel N <sup>o</sup> 4 commenced stripping in Canal and Forebay on May 11th.	
JUNE	Models installed at Dufferin Islands in June to study Design of Intake.		
JULY		Two Electric Shovels. (N <sup>o</sup> 8 large and N <sup>o</sup> 9 small), ordered on July 6th.  R.D. Johnson's Report on Study of Ice Skimmer and Canal Bends submitted on July 30th.	
AUGUST			
SEPTEMBER	Dredge, "Charles Boone", commenced at Chippawa on September 13th.	Shovel N <sup>o</sup> 4 commenced excavating Rock in Canal, first bench, on September 10th.  Crusher Plant commenced on September 30th.	
OCTOBER	First Experiments on Models for Intake completed on October 22nd.		
NOVEMBER			
DECEMBER			

# 1918

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Toronto, August 12<sup>th</sup> 1922. Made by ~~W.J.F.~~ Checked by *W.J.F.*  
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	INTAKE AND WELLAND RIVER	CANAL AND FOREBAY	SCREEN HOUSE AND POWER HOUSE
JANUARY	R.D. Johnson's Report on Study of Intake for 15,000 cu. ft. per sec. submitted on January 31st.		
FEBRUARY			Generators for Main Units 1 and 2 ordered on February 7th.
MARCH		Estimate of Additional Cost of Canal Concrete Lining Plant submitted in March	
APRIL		Shovel N°9 commenced in Rock Cut on April 18th.	Rock Excavation commenced on cliff on April 12th.
MAY		Small Steam Shovel N°10, ordered on May 10th. Shovel N°8 (third large electric shovel) commenced in Rock Cut on May 19th.	
JUNE		Shovel N°10 commenced in Rock Cut on June 17th.	
JULY			Excavation commenced for Siding to Power House (Shovel N°6) on July 17th. Turbines for Main Units 1 and 2 ordered on July 25th.
AUGUST		First Concrete placed in Whirlpool Transition on August 26th.	
SEPTEMBER			
OCTOBER			
NOVEMBER	Second Experiments on Models for Intake completed on November 5th.	Operation of Montrose Substation commenced on November 26th.	Excavation commenced for Power House (Shovel N°4) on November 15th.
DECEMBER			

1919

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	INTAKE AND WELLAND RIVER	CANAL AND FOREBAY	SCREEN HOUSE AND POWER HOUSE
JANUARY			
FEBRUARY			Generators for Main Units 3, 4, 5 and all Main Transformers ordered on February 26th.
MARCH	R.D. Johnson's Report on Design of Intake for 15,000 cu. ft. per sec. based on 1919 experiments submitted on March 1st.		
APRIL			Large Johnson Valves ordered on April 5th.
MAY	Parliamentary Commission, under	Chairmanship of Edgar Watson, M.P.P.,	appointed on May 19th.
JUNE	R.D. Johnson's "Report on Parliamentary Commission General Strike went into effect,	Queenston-Chippawa Development," submitted Report to Lieutenant-Governor, with exception of Construction	submitted on June 1st. on June 4th. Railway Operators on June 16th.
JULY	All work Temporary dam for Intake Commenced on July 29th.	resumed on July 12th after Large Steam Shovel No 11 ordered on July 12th.	the General Strike. Turbines and Governors for Main Units 3, 4 and 5 ordered on July 20th.
AUGUST	Hugh L. Cooper & Co's "Letter of	"Transmittal" with Estimates of Cost, Large Steam Shovel No 12 ordered on August 14th.	submitted on August 7th.
SEPTEMBER	General Report by Francis Lee	Paving Plant No 2 commenced concreting Canal floor on September 17th. Stuart and H.S. Kerbaugh submitted	on September 30th.
OCTOBER	P.A. Schoellkopf's Report on Elevation of Chippawa Pool submitted on October 18th. Hugh L. Cooper & Co's R.S. Lea's Report on Chippawa-Grass Island Pool	Shovel No 11 (first large steam shovel) commenced excavating in Canal on October 6th. "Final Report" submitted on and Canal Design submitted on October 26th.	Penstocks ordered on October 14th. October 22nd.
NOVEMBER		Control Gate ordered on November 16th. Lining Plant No 1 commenced Concreting Canal Walls on November 18th. Shovel No 12 (second large steam shovel) commenced excavating in Canal Cut on November 25th.	Concreting Plant commenced at Power House on November 8th.
DECEMBER		Dredge "Cyclone" arrived at Chippawa on December 10th.	

1920

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	INTAKE AND WELLAND RIVER	CANAL AND FOREBAY	SCREEN HOUSE AND POWER HOUSE
JANUARY			
FEBRUARY			Service Turbines ordered on February 4th. Concreting Plant commenced at Screen House on February 13th.
MARCH		Dredge "Cyclone" commenced Excavating in Earth section of Canal on March 14th.	
APRIL		Whirlpool Concreting Plant commenced on April 13th.	
MAY			Ice Chute Gates ordered on May 5th.
JUNE		Forebay Concreting Plant commenced on June 17th.	
JULY	Lidgerwood Cableway finished on July 2nd.	Shovel N°10 finished on July 2nd.	
AUGUST			
SEPTEMBER		Dredge "Cyclone" finished on September 3rd.  Shovel N°7 finished on September 21st. Shovel N°9 finished on September 24th.	
OCTOBER		Shovel N°3 finished on October 14th. Shovel N°5 finished on October 21st. Shovel N°4 finished on October 25th.	
NOVEMBER		Dredge "Niagara" commenced in November. Shovel N°1 finished on November 8th. Shovel N°8 finished on November 18th. Shovel N°2 finished on November 27th. Shovel N°11 finished on November 29th. Shovel N°12 finished on November 30th.	
DECEMBER	Report on Progress by Francis Lee	Stuart and H. S. Kerbaugh submitted on December 13th. Canal Lining finished on December 19th. Canal Paving finished on December 21st. Water turned into Canal, Forebay and one Penstock at 4:25 a.m. on December 24th. Whirlpool Concreting Plant finished on December 24th. Canal Retaining Wall finished on December 30th.	Main Unit No.1 commenced turning on December 28th. at Official Opening

1921

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WALTER J. FRANCIS, C.E.,  
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	INTAKE AND WELLAND RIVER	CANAL AND FOREBAY	SCREEN HOUSE AND POWER HOUSE
JANUARY		Dredge "Niagara" finished on January 25th.	Main Unit No1 put into service on January 6th.
FEBRUARY			Main Unit No2 commenced turning on February 21st.
MARCH			
APRIL	Unwatering of Intake Cofferdam commenced on April 1st. Hydro - Electric Inquiry Commission Contract for Construction of Intake dated April 26th.	under Chairmanship of W.D.Gregory	appointed on April 13th.
MAY			
JUNE			Main Unit No2 put into service on June 1st.
JULY			Main Unit No3 commenced turning on July 25th.
AUGUST	Excavation in Welland River resumed in August.		
SEPTEMBER			
OCTOBER			
NOVEMBER			
DECEMBER			

NOTE :- THIS SHEET COMPLETED TO AUGUST 12TH.

# 1922

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HYDRO-ELECTRIC INQUIRY COMMISSION  
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**CHRONOLOGICAL CHART**  
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Toronto, August 12<sup>th</sup> 1922. Made by *WJF* Checked by *WJF*  
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